

AMENDMENTS TO THE CLAIMS

1. (Previously presented) An aircraft capable of supersonic flight, comprising:  
a fuselage;  
a wing; and  
an engine nacelle, wherein the fuselage and wing are configured with a tailored area/lift distribution including a relaxed bluntness nose and a wing configuration that reduce sonic boom disturbance, and the wing is configured to carry lifting force to the trailing edge of the wing to create an expansion at the trailing edge of the wing that reduces aft sonic boom ground shock strength.
2. (Original) The aircraft of claim 1, further comprising a shock cancellation shroud around the engine nacelle.
3. (Original) The aircraft of claim 2, wherein the blunt nose further comprises an inlet and a slot, wherein the slot is configured to provide an outlet for airflow through the inlet.
4. (Currently amended) The aircraft of claim 2 further comprising an a fixed upward reflex on a portion of the upper and lower surfaces of the wing.
5. (Original) The aircraft of claim 4 further comprising an engine inlet at the front of the engine nacelle, wherein the inlet is positioned aft of the upwardly reflexed portion of the wing.
6. (Currently amended) The aircraft of claim 1 wherein the combination of said fuselage and wing portion comprises comprise a flying wing.
7. (Original) The aircraft of claim 4 wherein the shock cancellation shroud extends around a portion of the length of the engine nacelle.

8. (Canceled)

9. (Original) The aircraft of claim 5 wherein the shock cancellation shroud is positioned behind the engine inlet.

10. (Original) The aircraft of claim 9, wherein the volume of the mid-fuselage portion is reduced above the wing to generate an airflow expansion on a sloped portion of the mid-fuselage to lower the pressure above the wing in the area covered by the expansion, thereby reducing the angle-of-attack required to generate the same lift and reducing pressure below the wing.

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Withdrawn) The aircraft of claim 1 wherein the engine nacelle is mounted below the wing.

30. (Withdrawn) The aircraft of claim 1 wherein the wing is a gull dihedral wing that includes an outboard wing portion without dihedral.

31. (Withdrawn) The aircraft of claim 1 wherein the wing is a gull dihedral wing that includes an anhedral outboard wing portion.

32. (Withdrawn) The aircraft of claim 1, further comprising:  
a high-mounted lifting aft tail configured to carry lifting force to the trailing edge of the aircraft to create an expansion at the trailing edge of the tail that reduces the aft sonic boom ground shock strength.

33. (Withdrawn) An aircraft capable of supersonic flight, comprising:  
a fuselage; and  
a wing;

wherein the fuselage and wing are configured with a tailored area/lift distribution including a relaxed bluntness nose and a wing configuration that reduce sonic boom disturbance, wherein the height of lifting surfaces of the wing is increased toward the aft end of the aircraft to increase the effective length available for sonic boom minimization.

34. (Withdrawn) The aircraft of claim 33, further comprising an engine nacelle, and a shock cancellation shroud around the engine nacelle.

35. (Withdrawn) The aircraft of claim 33, wherein the blunt nose further comprises an inlet and a slot, wherein the slot is configured to provide an outlet for airflow through the inlet.

36. (Withdrawn) The aircraft of claim 33 further comprising an upward reflex on a portion of the upper and lower surfaces of the wing.

37. (Withdrawn) The aircraft of claim 36 further comprising an engine nacelle, and an engine inlet at the front of the engine nacelle, wherein the inlet is positioned aft of the upwardly reflexed portion of the wing.

38. (Withdrawn) The aircraft of claim 33 wherein the fuselage portion comprises a flying wing.

39. (Withdrawn) The aircraft of claim 34 further comprising an engine nacelle, wherein the shock cancellation shroud extends around a portion of the length of the engine nacelle.

40. (Withdrawn) The aircraft of claim 34 wherein the shock cancellation shroud is positioned behind the engine inlet.

41. (Withdrawn) The aircraft of claim 33, wherein the volume of the mid-fuselage portion is reduced above the wing to generate an airflow expansion on a sloped portion of the mid-fuselage to lower the pressure above the wing in the area covered by the expansion, thereby reducing the angle-of-attack required to generate the same lift and reducing pressure below the wing.

42. (Withdrawn) The aircraft of claim 33 further comprising an engine nacelle, wherein the engine nacelle is mounted below the wing.

43. (Withdrawn) The aircraft of claim 33 wherein the wing is a gull dihedral wing that includes an outboard wing portion without dihedral.

44. (Withdrawn) The aircraft of claim 33 wherein the wing is a gull dihedral wing that includes an anhedral outboard wing portion.

45. (Withdrawn) The aircraft of claim 33, further comprising:

a high-mounted lifting aft tail configured to carry lifting force to the trailing edge of the aircraft to create an expansion at the trailing edge of the tail that reduces the aft sonic boom ground shock strength.